

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
2 June 2005 (02.06.2005)

PCT

(10) International Publication Number
WO 2005/049839 A3

(51) International Patent Classification⁷: C12N 15/82,
A01H 5/00

(21) International Application Number:
PCT/EP2004/012743

(22) International Filing Date:
10 November 2004 (10.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
PCT/EP03/12530
10 November 2003 (10.11.2003) EP
04 016 012.9 7 July 2004 (07.07.2004) EP

(71) Applicant (for all designated States except US): ICON
GENETICS AG [DE/DE]; Briennerstr. 12a, 80333
München (DE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): MARILLONNET,
Sylvestre [FR/DE]; Nietlebenerstr. 20, 06126 Halle (DE).

THOERINGER, Carola [DE/DE]; Alfred-Oelssnerstr. 2,
06120 Halle/Saale (DE). KLIMYUK, Victor [GB/DE];
Herderstr. 10, 06114 Halle (DE). GLEBA, Yuri [UA/DE];
Mühlweg 37, 06114 Halle (DE).

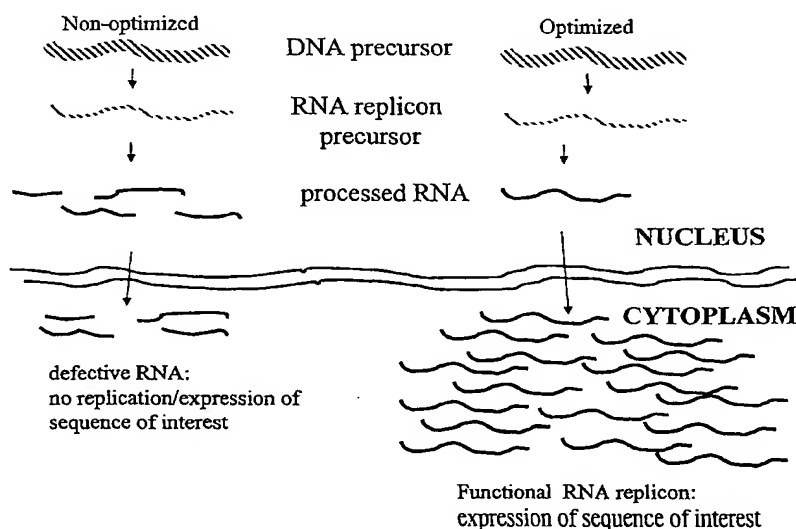
(74) Agent: HARTZ, Nikolai, F.; Wächterhäuser & Hartz, We-
instr. 8, 80333 München (DE).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE,

[Continued on next page]

(54) Title: RNA VIRUS-DERIVED PLANT EXPRESSION SYSTEM



(57) Abstract: A process of expressing a sequence of interest in a plant, plant part, or plant cell culture, comprising: (a) providing a plant, plant part, or plant cell culture containing in cell nuclei a heterologous DNA having a sequence encoding an RNA replicon operably linked or linkable to a transcription promoter, wherein said sequence encoding an RNA replicon contains (i) sequences for replicon function of said RNA replicon, said sequences being derived from a sequence of a plant RNA virus, (ii) a sequence of interest, whereby said sequences for replicon function exhibit at selected localities of said sequences of said plant RNA virus function-conservative differences from said sequence of said plant RNA virus, said differences causing an increased frequency of replicon formation compared to an RNA replicon not exhibiting said differences; and (b) causing expression of said sequence of interest.



SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:

3 November 2005